

## Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: G3 Operating LLC  
Well Name/Number: Engelke 1-15-22H  
Location: NW NE Section 15 T30N R57E  
County: Roosevelt, MT; Field (or Wildcat) Wildcat

### Air Quality

(possible concerns)

Long drilling time: No, 30-40 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation wildcat well test to 19,813' MD/9986' TVD.

Possible H<sub>2</sub>S gas production: Yes, slight H<sub>2</sub>S possible from the Mississippian formations.

In/near Class I air quality area: No Class I air quality area nearby.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☒ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Plan is to drill a single lateral horizontal Bakken Formation test, 19,813' MD/9986' TVD. If there are existing pipelines for natural gas in the area then associated gas must be tied into system or if no gathering system nearby associated gas can be flared under Board Rule 36.22.1220.

### Water Quality

(possible concerns)

Salt/oil based mud: Yes to oil based invert drilling fluids for intermediate casing hole. Horizontal hole will be drilled with saltwater. Surface casing hole will be drilled with freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: No drainages nearby from this location. Closest drainage is an unnamed ephemeral drainage that drains to an dry depression, about 5/8 of a mile to the southwest from this location.

Water well contamination: No, closest water wells are about 5/8 of a mile to the northwest and 7/8 of a mile to the southeast from this location. Depth of these domestic and irrigation wells range 102' to 336'. This well will be drilled with freshwater and freshwater mud to 1,700' and steel surface casing will be run and cemented to surface to protect groundwater.

Porous/permeable soils: Yes, sandy silty soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of solids/liquids (in approved facility)

☐ Other: \_\_\_\_\_

Comments: 1,700' surface casing will be drilled with freshwater, steel casing will be run to 1,700' and cemented back to surface, to protect freshwater zones in adjacent water wells. Also, covering Fox Hills

aquifer. Adequate surface casing cemented to surface and operational BOP equipment should prevent problems.

### **Soils/Vegetation/Land Use**

(possible concerns)

Stream crossings: None anticipated.

High erosion potential: No, location will require a small cut of up to 8.1' and small fill of up to 5.5', required.

Loss of soil productivity: No, location to be restored after drilling, if nonproductive. If productive unused portion of this drillsite will be reclaimed.

Unusually large wellsite: No, very large well site 381'X500'.

Damage to improvements: Slight surface use appears to be a CRP field.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be over existing highway 405, county road #17 1011 and a east west section line trail. New access road will be built and/or upgraded for heavy trucks into this location, about 2,253' off the existing county road into this location. Oil based invert drilling fluids will be recycled. Completion fluids will hauled to a commercial Class II disposal. Cuttings and solids will be buried/solidified(fly-ashed) on site in the lined cuttings pit. The pit will be allowed to dry and then pit will be backfilled with a minimum of 4' of cover over the top of the cuttings. No concerns.

### **Health Hazards/Noise**

(possible concerns)

Proximity to public facilities/residences: Residences about 7/8 of a mile to the southeast, 1.125 miles to the north northwest and 1.5 miles to the southeast from this location. Cemetery is about 1/2 of a mile to the west from this location. The Town of Froid, MT is about 10.15 miles to the west southwest from this location.

Possibility of H2S: Yes, slight.

Size of rig/length of drilling time: Triple drilling rig 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems.

### **Wildlife/recreation**

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): Medicine Lake National Wildlife Refuge boundary is about 4.4 miles to the northwest from this location.

Proximity to recreation sites: Medicine Lake National Wildlife Refuge boundary is about 4.4 miles to the northwest from this location.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species is the Sprague's Pipit. NH tracker website indicates species of concern five (5): Sprague's Pipit, Burrowing Owl, Ferruginous Hawk, Evening Grosbeak and Whooping Crane. NH tracker website lists three (3) Potential Species of Concern: Chimney Swift, Eastern Screech Owl and Tennessee Warbler.

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: \_\_\_\_\_

Comments: Private CRP surface land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

### **Historical/Cultural/Paleontological**

(possible concerns)

Proximity to known sites: None identified.

Mitigation

☐ avoidance (topographic tolerance, location exception)

☐ other agency review (SHPO, DSL, federal agencies)

☐ Other: \_\_\_\_\_

Comments: Private CRP surface land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

### **Social/Economic**

(possible concerns)

☐ Substantial effect on tax base

☐ Create demand for new governmental services

☐ Population increase or relocation

Comments: Wildcat well. No concerns

---

### **Remarks or Special Concerns for this site**

Plan to drill a single lateral horizontal Bakken Formation wildcat well test to 19,813'MD/9986'TVD.

### **Summary: Evaluation of Impacts and Cumulative effects**

No long term impacts expected, some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major

action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki  
(title:) Chief Field Inspector  
Date: June 6, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website  
(Name and Agency)  
Roosevelt County water wells  
(subject discussed)  
June 6, 2012  
(date)

US Fish and Wildlife, Region 6 website  
(Name and Agency)  
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA  
COUNTIES, Roosevelt County, Montana  
(subject discussed)  
June 6, 2012

Montana Natural Heritage Program Website  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, T30N R57E  
(subject discussed)

June 6, 2012  
(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_